

REFERENCE NO. OF DOCUMENT BEING CONTINUED: NNK10OE03R

NAME OF OFFEROR OR CONTRACTOR:

**ATTACHMENT 01. STATEMENT OF WORK**

**For**

**NASA Agency-Wide Acquisition for the Supply of Liquid Hydrogen**

**September 2, 2010**

**STATEMENT OF WORK: STENNIS SPACE CENTER (SSC)**

- (a) **Delivery:** Delivery and acceptance of product will normally be made Monday through Friday, from 7:00 AM to 10:00 PM. However, under unusual circumstances, the contractor agrees to deliver product 24 hours a day, 7 days a week, including holidays.
- (b) **Clearance:** The badging point-of-contact will coordinate badging and clearance requirements of the vendor's drivers.
- (c) **Seals:** SSC requires the tanker to be sealed to prevent tampering.
- (d) **Quantification of product delivered:** Vendor will utilize certified scales at SSC to determine quantity of product delivered.
- (e) **SSC responsibility during delivery:** SSC personnel have to be present to operate SSC equipment during the delivery of liquid hydrogen.
- (f) **Receiving storage:** Current containers in use include those which are listed below. However, the Government reserves the right to withdraw, change, or substitute receiving containers at anytime during the life of the contract.

<b>Facility</b>	<b>No. of Tanks</b>	<b>Capacity (Gallons)</b>
High Pressure Gas Facility	1	28,000
E1 Storage	1	57,000
LH2 Transfer Facility (Barges)	3	250,000

- (g) **Fill point interface:** Linde bayonet
  - (h) **SSC points of contact** will be specified on delivery orders.
- (End of section)

NAME OF OFFEROR OR CONTRACTOR:

**STATEMENT OF WORK: MARSHALL SPACE FLIGHT CENTER (MSFC)**

- (a) **Delivery:** Delivery and acceptance of product will normally be made Monday through Friday, from 7:00 AM to 2:00 PM. However, under unusual circumstances, the Contractor agrees to deliver product 24 hours a day, 7 days a week, including holidays.
- (b) **Clearance Procedures:** The badging point-of-contact will coordinate badging and clearance requirements of the vendor’s drivers.
- (c) **Seals:** MSFC requires the tanker to be sealed to prevent tampering.
- (d) **Quantification of product delivered:** Vendor will utilize certified scales at MSFC to determine quantity of product delivered.
- (e) **MSFC responsibility during delivery:** MSFC personnel have to be present to operate MSFC equipment during the delivery of liquid hydrogen.
- (f) **Receiving storage:** Current facility storage containers in use at MSFC include those which are listed below. However, the Government reserves the right to add, withdraw, change, or substitute receiving containers at anytime during the life of the contract.

Location	Bldg	No. of tanks	Capacity (Gallons)
MSFC	4572	1	100,000
MSFC	4657	1	12,000
		1	35,000
MSFC	4672	2	225,000

- (g) **Fill point interface:** Air Force bayonet
- (h) **MSFC points of contact** will be specified on delivery orders.

**(End of section)**

NAME OF OFFEROR OR CONTRACTOR:

**STATEMENT OF WORK: KENNEDY SPACE CENTER (KSC) & CAPE CANAVERAL AIR FORCE STATION (CCAFS)**

- (a) **Delivery:** Delivery and acceptance of product will normally be made Monday through Friday, from 6:00 AM to 3:30 PM. However, under unusual circumstances, the Contractor agrees to deliver product 24 hours a day, 7 days a week, including holidays.
- (b) **Clearance Procedures:** The badging point-of-contact will coordinate badging and clearance requirements of the vendor’s drivers.
- (c) **Seals:** KSC/CCAFS requires the tanker to be sealed to prevent tampering.
- (d) **Quantification of product delivered:** Vendor will utilize certified scales at source plant to determine quantity of product delivered.
- (e) **KSC/CCAFS responsibility during delivery:** KSC/CCAFS personnel have to be present to operate receiving equipment during the delivery of liquid hydrogen.
- (f) **Receiving storage:** Current facility storage containers in use at KSC and CCAFS include those which are listed below. However, the Government reserves the right to add, withdraw, change, or substitute receiving containers at anytime during the life of the contract.

Location	Type	Facility	No. Of Tanks	Capacity (Gallons)	Loading Stations	Comments
CCAFS	Hydrogen	LH2 Storage Area	1	42,000	1	Fixed Storage Tank
KSC	Hydrogen	LC-39A	1	850,000	5	Fixed Storage Tank
KSC	Hydrogen	LC-39B	1	850,000	5	Fixed Storage Tank
KSC	Hydrogen	LT-54	1	13,000	1	Mobile Tanker

- (g) **Fill point interface:** Air Force bayonet
- (h) KSC/CCAFS points of contact will be specified on delivery orders.

Note: This SOW does **NOT** include the hydrogen requirements in direct support of Space Transportation System Mission launches.

(End of section)

NAME OF OFFEROR OR CONTRACTOR:

**STATEMENT OF WORK: WHITE SANDS TESTING FACILITY (WSTF)**

- (a) **Delivery:** Delivery and acceptance of product will normally be made Monday through Friday, from 7:00 AM to 3:30 PM. However, under unusual circumstances, the Contractor agrees to deliver product 24 hours a day, 7 days a week, including holidays.
- (b) **Clearance Procedures:** The badging point-of-contact will coordinate badging and clearance requirements of the vendor's drivers.
- (c) **Seals:** WSTF requires the tanker to be sealed to prevent tampering.
- (d) **Quantification of product delivered:** Vendor will utilize certified scales at WSTF to determine quantity of product delivered.
- (e) **WSTF responsibility during delivery:** WSTF personnel have to be present to operate WSTF equipment during the delivery of liquid hydrogen.
- (f) **Receiving storage:** Current facility storage containers in use at WSTF include those which are listed below. However, the Government reserves the right to add, withdraw, change, or substitute receiving containers at anytime during the life of the contract.

<b>Facility</b>	<b>Tank Designator</b>	<b>Capacity (Gallons)</b>	<b>Comments</b>
250 Area	WSTF #TK-2LH- EH101	15,000	Fixed Storage Tank

- (g) **Fill point interface:** Air Force bayonet
- (h) **WSTF points of contact** will be specified on delivery orders.

(End of section)

**STATEMENT OF WORK: GLENN RESEARCH CENTER (GRC)**

- (a) **Delivery:** Delivery and acceptance of product will normally be made Monday through Friday, from 8:00 AM to 4:00 PM at the Cleveland location; and 7:30 AM to 2:30 PM at the Plum Brook location. However, under unusual circumstances, the Contractor agrees to deliver product 24 hours a day, 7 days a week, including holidays.
- (b) **Clearance Procedures:** The badging point-of-contact will coordinate badging and clearance requirements of the vendor’s drivers.
- (c) **Seals:** GRC requires the tanker to be sealed to prevent tampering.
- (d) **Quantification of product delivered:** Vendor will utilize certified scales at GRC to determine quantity of product delivered.
- (e) **GRC responsibility during delivery:** GRC personnel have to be present to operate GRC equipment during the delivery of liquid hydrogen.
- (f) **Receiving storage:** Current facility storage containers in use at GRC include those which are listed below. However, the Government reserves the right to add, withdraw, change, or substitute receiving containers at anytime during the life of the contract. Additionally, there will be instances where propellant delivery will be made directly into Government tankers, at either the Cleveland or Plum Brook location.

Location	Type	Facility	No. Of Tanks	Capacity (Gallons)	Loading Stations	Comments
Cleveland	Hydrogen	Bldg. 401	1	1,500	1	Mobile Tanker
Cleveland	Hydrogen	Bldg. 401	1	4,000	1	Mobile Tanker

Note: GRC orders will be less than a full load.

- (g) **Fill point interface:** Air Force bayonet
- (h) **GRC points of contact** will be specified on delivery orders.

(End of section)

**STATEMENT OF WORK: PRATT & WHITNEY ROCKETDYNE**

- (a) Delivery: Delivery and acceptance of product will normally be made Monday through Friday, from 7:00 AM to 4:00 PM. However, under unusual circumstances, the Contractor agrees to deliver product 24 hours a day, 7 days a week, including holidays.
- (b) Clearance Procedures: The badging point-of-contact will coordinate badging and clearance requirements of the vendor's drivers.
- (c) Seals: Pratt & Whitney requires the tankers to be sealed to prevent tampering.
- (d) Quantification of product delivered: Vendor will utilize certified scales at Pratt & Whitney to determine quantity of product delivered.
- (e) Pratt & Whitney responsibility during delivery: Pratt & Whitney personnel have to be present to operate Pratt & Whitney equipment during the delivery of liquid hydrogen.
- (f) Delivery Locations: Current facility storage containers in use at Pratt & Whitney include those which are listed below. However, the Government reserves the right to add, withdraw, change, or substitute receiving containers at anytime during the life of the contract.

<b>P&amp;W Facility</b>	<b>Tanks Designator</b>	<b>Capacity (Gallons)</b>
E Area PSA	H42	90,000
E Area PSA	PSA	50,000

- (g) Fill point interface: Air Force bayonet
- (h) Pratt & Whitney Rocketdyne points of contact will be specified on delivery orders.

(End of section)